

AMENDMENTS TO THE CLAIMS:

1. (Original) A position determination system, comprising:

a first measuring module, including

a first sensing device for obtaining positional data of a first testing target relative to the first sensing device;

a calibration sensing device rigidly linked to the first sensing device, wherein the positional relationship between the first sensing device and the calibration sensing device is known; and

a first rotation mechanism for rotating the first sensing device without altering the positional relationship between the first sensing device and the calibration sensing device;

a second measuring module, including

a second sensing device for obtaining positional data of a second testing target relative to the second sensing device;

a calibration target for use with the calibration sensing device to obtain positional data of the calibration target relative to the calibration sensing device, wherein the calibration target is rigidly linked to the second sensing device, and the positional relationship between the second sensing device and the calibration target is known; and

a second rotation mechanism for rotating the second sensing device without altering the positional relationship between the second sensing device and the calibration target;

and

a data processing system coupled to the first and second measuring modules and configured to provide a user interface indicating positions of the first sensing device and the second sensing device.

2. (Original) The system of claim 1, wherein the data processing system is configured for carrying out the machine-implemented steps of:

receiving information related to a positional relationship between the first testing target and the first sensing device;

receiving information related to a positional relationship between the second testing target and the second sensing device;

receiving information related to a positional relationship between the calibration target and the calibration sensing device; and

determining a positional parameter of the first testing target and a positional parameter of the second testing target based on the positional relationship between the first sensing device and the calibration target, the positional relationship between the second sensing device and the calibration target, the positional relationship between the first testing target and the first sensing device, the positional relationship between the second testing target and the second sensing device, and positional relationship between the calibration target and the calibration sensing device.

3. (Original) The system of claim 1, wherein the first sensing device, the second sensing device and the calibration sensing device are machine vision devices.

4. (Original) The system of claim 3, wherein the machine vision devices are cameras.

5. (Original) The system of claim 1, wherein the first testing target, the second testing target and the calibration target include light emitting sources.

6. (Original) The system of claim 5, wherein the first sensing device, the second sensing device and the calibration sensing device are light sensors.

7. (Original) The system of claim 1, wherein the first measuring module further includes a first supporting structure to which the first sensing device and the calibration target attach, and the second measuring module includes a second supporting structure to which the second sensing device and the calibration sensing device attach.

8. (Original) The system of claim 7, wherein the first supporting structure is rotatable relative to a first pivot axis, and the second supporting structure is rotatable relative to a second pivot axis.

9. (Original) The system of claim 8, wherein the first sensing device and the calibration sensing device move with the first supporting structure when the first supporting structure rotates relative to the first pivot axis; and the second sensing device and the calibration target move with the second supporting structure when the second supporting structure rotates relative to the second pivot axis.

10. (Original) The system of claim 8, wherein the first rotation mechanism includes a first motor for rotating the first supporting structure relative to the first pivot axis, and the second

rotation mechanism includes a second motor for rotating the second supporting structure relative to the second pivot axis.

11. (Original) The system of claim 1, wherein the data processing system is configured to carry out the machine-implemented steps of:

receiving information related to a positional relationship between the calibration target and the calibration sensing device;

accessing reference data; and

indicating the positions of the first sensing device and the second sensing device based on the positional relationship between the calibration target and the calibration sensing device, and the reference data.

12. (Original) The system of claim 11, wherein the reference data is related to the positional relationships between the calibration target and the calibration sensing device when the first sensing device and the second sensing device are respectively positioned to at least two discrete positions.

13. (Original) The system of claim 12, wherein the reference data is generated based on data obtained by measuring less than all possible positional relationships between the calibration target and the calibration sensing device when the first sensing device and the second sensing device are respectively positioned to at least two discrete positions.

Claims 14-20 (Cancelled)

21. (Original) A position determination system, comprising:

a first measuring module, including

a first sensing means for obtaining positional data of a first testing target relative to the first sensing device;

a calibration sensing means rigidly linked to the first sensing device, wherein the positional relationship between the first sensing device and the calibration sensing device is known; and

a first rotation means for rotating the first sensing device without altering the positional relationship between the first sensing device and the calibration sensing device;

a second measuring module, including

a second sensing means for obtaining positional data of a second testing target relative to the second sensing device;

a calibration target for use with the calibration sensing means for obtaining positional data of the calibration target relative to the calibration sensing means, wherein the calibration target is rigidly linked to the second sensing device, and the positional relationship between the second sensing means and the calibration target is known; and

a second rotation means for rotating the second sensing device without altering the positional relationship between the second sensing device and the calibration target;

and

a data processing system coupled to the first and second measuring modules and configured to provide a user interface indicating positions of the first sensing device and the second sensing device.

22. (New) The position determination system of claim 1, further comprising at least one position sensor configured to couple to the data processing system and the first and second measuring modules, and generate signals representing the respective positions of the first sensing device and the second sensing device.

23. (New) The position determination system of claim 22, wherein the user interface indicates positions of the first sensing device and the second sensing device based on the signals generated by the at least one position sensor.

24. (New) The position determination system of claim 21, further comprising at least one position sensing means configured to couple to the data processing system and the first and second measuring modules, and generate signals representing the respective positions of the first sensing means and the second sensing means.

25. (New) The position determination system of claim 24, wherein the user interface indicates positions of the first sensing device and the second sensing device based on the signals generated by the at least one position sensing means.